



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/525,159	06/05/2007	Hiroyuki Ichiba	GUA-UTO-331	3245
26683	7590	08/31/2010	EXAMINER	
THE GATES CORPORATION			NGUYEN, VU Q	
IP LAW DEPT. 10-A3			ART UNIT	PAPER NUMBER
1551 WEWATTA STREET				3657
DENVER, CO 80202				
			MAIL DATE	DELIVERY MODE
			08/31/2010	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>
	10/525,159	ICHIBA, HIROYUKI
	<b>Examiner</b>	<b>Art Unit</b>
	VU Q. NGUYEN	3657

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 15 June 2010.  
 2a) This action is **FINAL**.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 3-8 and 10-16 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 3-8 and 10-16 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                         | Paper No(s)/Mail Date. _____ .                                    |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ . | 5) <input type="checkbox"/> Notice of Informal Patent Application |
|  | 6) <input type="checkbox"/> Other: _____ .                        |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 3-8 and 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Patent Document JP 5-248496 (JP '496) in view of European Patent Document EP 0767509 (EP '509).

Regarding claim 4, JP '496 discloses a transmission belt (11) comprising: a contact face (14b) contacting with a pulley (7, 8, 9, or 10) when said transmission belt is wound around said pulley (see Fig. 1), and a piece of foreign matter (16) embedded near said contact face and at a distance (d) from said contact face in said transmission belt (see Fig. 2); such that upon said contact face being worn by said pulley when said transmission belt rotates around said pulley, then said foreign matter is exposed at said contact face so as to warn of a decrease in the transmission power of said transmission belt on said pulley, wherein said foreign matter contacting said pulley makes a warning sound to warn of a decrease in the transmission power (see the provided English abstract).

Regarding claim 4, JP '496 does not disclose expressly that said piece of foreign matter has a longitudinal direction and said longitudinal direction of said foreign matter is substantially in the direction perpendicular to said contact face.

EP '509 teaches in Figs. 6-7, a wear indicator comprising a piece of foreign matter (18, 20, 21, or 22) having a conical shape with a longitudinal direction and said longitudinal direction of said foreign matter being substantially in the direction perpendicular to a contact face (outer face or surface of element 17 or 19) (see Figs. 6-7 and the last six paragraphs of the provided English machine translation).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify the piece of foreign matter as taught by JP '496 to have a conical shape with a longitudinal direction substantially perpendicular to the contact face as taught by EP '509. The motivation for doing so would have been to provide greater, prolonged wear indication and further, to provide different degrees of wear indication (due to the conical shape of the piece of foreign matter, as taught by EP '509).

Regarding claim 5, see EP '509 and Figs. 6-7.

Regarding claim 8, see JP '496 and the provided English abstract disclosing a warning sound when the piece of foreign matter 16 contacts the pulley. The Examiner submits that the warning sound inherently has a specific frequency, as broadly recited. Furthermore, in a manner similar to Applicant's, the Examiner submits that the warning sound would become louder as the contact face becomes more worn when the piece of foreign matter 16 is modified to have a conical shape, as set forth above.

Regarding claims 3 and 15, the claims are rejected for at least the same reasons as set forth above with regard to the warning sound becoming louder as the contact face becomes more worn. JP '496 does not disclose expressly that said foreign matter is softer than said pulley. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify either the foreign matter or the pulley as taught by JP '496 so that the foreign matter is softer than the pulley. The motivation for doing so would have been to merely provide a suitable, alternative material based on various design factors such as cost, availability, and manufacturability. The Examiner submits that material selection is a routine practice performed by those of ordinary skill in the art, and it is well-known to those of ordinary skill in the art that, relatively speaking, softer materials do not scratch or damage harder materials. The Examiner submits that prevention of damage to parts is obviously desirable to those of ordinary skill in the art.

Regarding claim 7, JP '496 does not disclose expressly that said piece of foreign matter is given a color, which is different from a color of other parts of said transmission belt.

EP '509 further teaches that the piece of foreign matter (18, 20, 21, or 22) is given a color, which is different from a color of other parts (see the 6<sup>th</sup> to last and 5<sup>th</sup> to last paragraphs of the provided English machine translation).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify the transmission belt as taught by JP '496 so that the piece of foreign matter is given a color different from other parts as taught by EP '509. The

motivation for doing so would have been merely to further provide an additional visual indication of wear that can be easily implemented, thereby allowing for more versatile and robust wear indication.

Regarding claim 13, the claim is rejected for at least the same reasons as set forth above.

Regarding claim 14, the claim is rejected for at least the same reasons as set forth above. JP '496 further discloses a belt body (14), which is made of a predetermined material (a resilient material such as rubber; see the provided English abstract), having a certain thickness between a first surface (bottom surface as viewed in Fig. 2) of said belt body and a second surface (top surface as viewed in Fig. 2) of said belt body; and a piece of foreign matter (16), which is made of a different material (glass/metal; see the provided English abstract) from said predetermined material, embedded in said belt body at a distance (d) from said first surface; the distance from said foreign matter to the first surface of said belt body in the thickness direction being shorter than the distance from said foreign matter to the second surface of said belt body in the thickness direction (see Fig. 2).

Regarding claim 6, the claim is rejected for at least the same reasons as set forth above. JP '496 further discloses a plurality of pieces of said foreign matter (16) are embedded in said transmission belt (11), each said piece having a top, with said top closest to said contact face (14b) (see Fig. 2).

Regarding claim 6, JP '496 does not disclose expressly a distance in the perpendicular direction between said contact face and the top of at least one piece of

said foreign matter being different from a distance in the perpendicular direction between said contact face and the top of another piece of said foreign matter.

EP '509 further teaches in Fig. 7, a plurality of pieces of said foreign matter (20, 21, 22), each said piece having a top, with said top closest to said contact face (outer face or surface of element 19); and a distance in the perpendicular direction between said contact face and the top of at least one piece of said foreign matter being different from a distance in the perpendicular direction between said contact face and the top of another piece of said foreign matter (see the 6<sup>th</sup> to last paragraph of the provided English machine translation disclosing the plurality of pieces of foreign matter having different lengths).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify the plurality of pieces of foreign matter as taught by JP '496 to have different lengths as taught by EP '509. The motivation for doing so would have been to further provide different degrees of wear indication at different locations, thereby allowing for more versatile and robust wear indication.

Claims 10-12 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Patent Document JP 5-248496 (JP '496) in view of European Patent Document EP 0767509 (EP '509) as applied to claims 3-8 and 13-15 above, and further in view of Japanese Patent Document JP 6-281517 (JP '517).

JP '496, as modified by EP '509, is relied upon as set forth above.

Regarding claim 10, JP '496 does not disclose expressly a sound sensor, which detects said specific sound, set up near where said transmission belt contacts said pulley; and a warning apparatus which sends out a warning according to the volume or sound pressure of said specific sound detected by said sound sensor.

JP '517 teaches a sound sensor (3), which detects a specific sound, set up near where a transmission belt (2) contacts a pulley (1a or 1b); and a warning apparatus (201, 206) which sends out a warning (as broadly recited) according to the volume or sound pressure (inherent) of said specific sound detected by said sound sensor.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify the apparatus as taught by JP '496 to include a sound sensor and a warning apparatus as taught by JP '517. The motivation for doing so would have been to merely provide a more versatile, robust system of wear indication that further ensures that any need to replace the transmission belt is known.

Regarding claim 11, the Examiner submits that rotation of the transmission belt 11 of JP '496 at any given speed will inherently cause the foreign matter 16 to contact the pulley at some cycle depending on its location, and thus make the specific sound appear at that cycle, as broadly recited.

Regarding claim 12, the Examiner submits that the combination as set forth above meets the limitation of the claim, as broadly recited.

Regarding claim 16, in a manner similar to Applicant's, the Examiner submits that the specific sound would become louder as the contact face becomes more worn when the piece of foreign matter 16 is modified to have a conical shape, as set forth above.

***Response to Arguments***

Applicant's arguments filed 06/15/2010 have been fully considered but they are not persuasive.

Applicant's arguments appear to be at least partly based on a belief that EP '509 is non-analogous art. Applicant is reminded that it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, the Examiner submits that EP '509 can be said to be reasonably pertinent to the particular problem with which Applicant was concerned, i.e. wear indication.

Applicant's arguments also appear to be based on a belief that nonobvious changes or departures from the teachings of one or both of the references would have to be made. This appears to be due to the lack of a clear understanding of the proposed combination. To clarify, the Examiner submits that one of the modifications to JP '496 only involves changing the *shape* of the foreign matter (16) so that it has a conical shape as taught by EP '509 in Figs. 6-7. The proposed combination never calls for changing the material of the foreign matter to be thermoplastic or the same material as the belt. Thus, by maintaining the material of the foreign matter and only changing the shape of the foreign matter to be conical, a progressively increasing warning sound can be achieved.

Applicant makes several assertions that there is no suggestion to combine JP '496 and EP '509. In response to applicant's argument that there is no teaching, suggestion, or motivation to combine the references, the examiner recognizes that obviousness may be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, motivation, or rationale to do so found either in the references themselves or *in the knowledge generally available to one of ordinary skill in the art*. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988), *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992), and *KSR International Co. v. Teleflex, Inc.*, 550 U.S. 398, 82 USPQ2d 1385 (2007). In this case, the rationales provided in the rejection above can be said to be within the general knowledge of those of ordinary skill in the art. The proposed modifications above merely provide predictable results that are at least obvious to try.

Applicant also argues different manufacturing processes in JP '496 and EP '509 and asserts certain difficulties without factual support. However, the proposed combination never calls for changing any manufacturing processes, and differing manufacturing processes are not a test for obviousness or non-obviousness, especially in apparatus claims.

For at least these reasons, the Examiner maintains the rejection of the claims.

***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to VU Q. NGUYEN whose telephone number is (571) 272-7921. The examiner can normally be reached on Monday through Friday, 11:30 AM to 8:00 PM, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Siconolfi can be reached on (571) 272-7124. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/V. Q. N./  
Examiner, Art Unit 3657

/Robert A. Siconolfi/  
Supervisory Patent Examiner, Art  
Unit 3657